College of Computer and Information Sciences

Information Systems Department

Train reservation system

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Students Names	IDs

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Appendix

1 Introduction

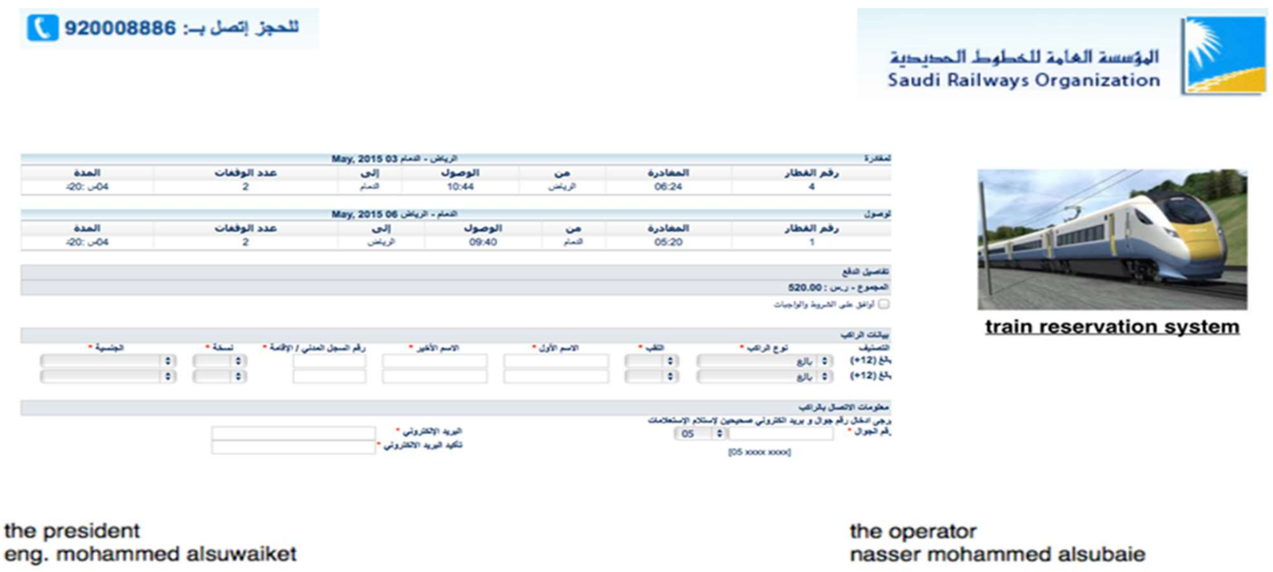
This system is basically concerned with the reservation of train tickets to the passengers.

2 General Content

2.1 Identification

train reservation system

note: the revision of this information is granted by Saudi railways organization as of the day when the train is established.



2.2 Terms and Definitions

- *User: passenger , booking agent , company or administrator.*

2.3 Abbreviated terms

- *CVV: Card Verification Value*
- *SMS: Short Message Service*
- *DFD: Data Flow Diagram*
- *TRS: Train Reservation System*

2.4 References

- ***http://www.saudiairlines.com/portal/saudiairlines/Welcome***

- ***http://www.saudirailways.org/portal/page/portal/PRTSAR/root_ar***
- ***http://traveltips.usatoday.com/advantages-online-reservations-63078.html***
- ***Online Diagram Software http://creately.com/***

2.5 Elicitation Techniques

Three elicitation techniques have been used in this TRS which are data collection, interview and questionnaire.

-Data Collection:

We have used data collection to help us understand the system in general and its requirement. By reading some articles about online reservation and searching about Saudi railways. Also our experience in online Saudi Airlines reservation help us know the input and output of the system.

-Interview:

We have interviewed with multiple interviewee with the same time to save time and efforts. Interview questions are in the appendix.

Interview Summarized:

train reservation system is established for the people to have the level of convince during booking of travel. they could just spend a minute for reservation all they have to do is , to fill up the form provided by the operator. they can have the trip 3 hours before departures. with this system they could cancel their trips wherever they want , provided that they have to inform the agency on the management one hour before the trip. they could even refund the reservation they bought but the company will take 10% deduction those who cancel the trip and 50% deduction

who wants re-changing. the deduction will motivate the customer to being responsible enough at the train trip and also it could help other chance passenger to avail the trip. They could get the reservation ticket on the train wherever they are.

-Questionnaire:

This questionnaire was set up on 04/05/2015 April, during these weeks, attended by some 60 people in the solution of this the questionnaire, were published the questionnaire link to social networking sites to get the most amount of responses, and concluded that most likely will not face difficulties or problems in booking , online reservation to shorten the time preferably, the majority ensures booking of traditional mail, has been canceled due to a few of them booked electronic error, and evaluation was to mail order booking is very good to excellent.

3 Stakeholder requirements specification (StRS) document

3.1 Business Purpose

The main purpose of this business is to give the company and also the travelers a satisfaction and convenience during travel and booking.

3.2 Business Scope

A) Train reservation system.

B) The range of business activities is that is refers on how to communicate with customers or travelers during reservation of travels.

C) In this scope for example : a customer made an error during encoding his/her profile in the reservation form , then the personal of the train got a conflict on it , it is the error as soon as possible in able for the conflict to be settled.

3.3 Stakeholder

1) Administrator : this user will have control over all the system.

2) Passenger: this user will be able to search and book a trip.

3) Booking agent : this user will be able to search and book trip for passengers .

4) Company : this user will be able to search and book trips for their staff or groups.

3.4.1 Goals:

The goal of the train reservation system is to make the travel more easier.

3.4.2 Objectives:

- *The main objective of this system is to enable for the travelers to spend*

  less of their time during the booking or scheduling the time of travel.

- *Also it is a great help for the travelers or who want to travel such places to*

  know when is the day and place of the scheduled train going.

3.5 Business Processes

The following figures illustrate business process in TRS:

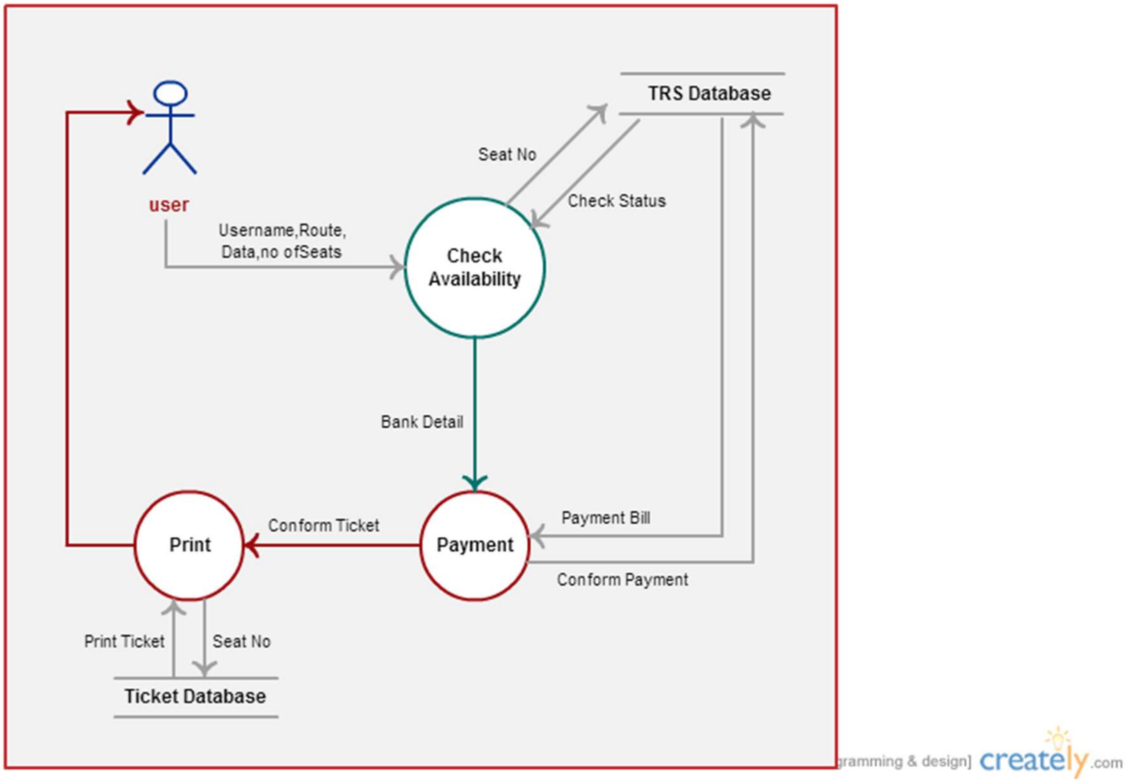


Figure 1: DFD

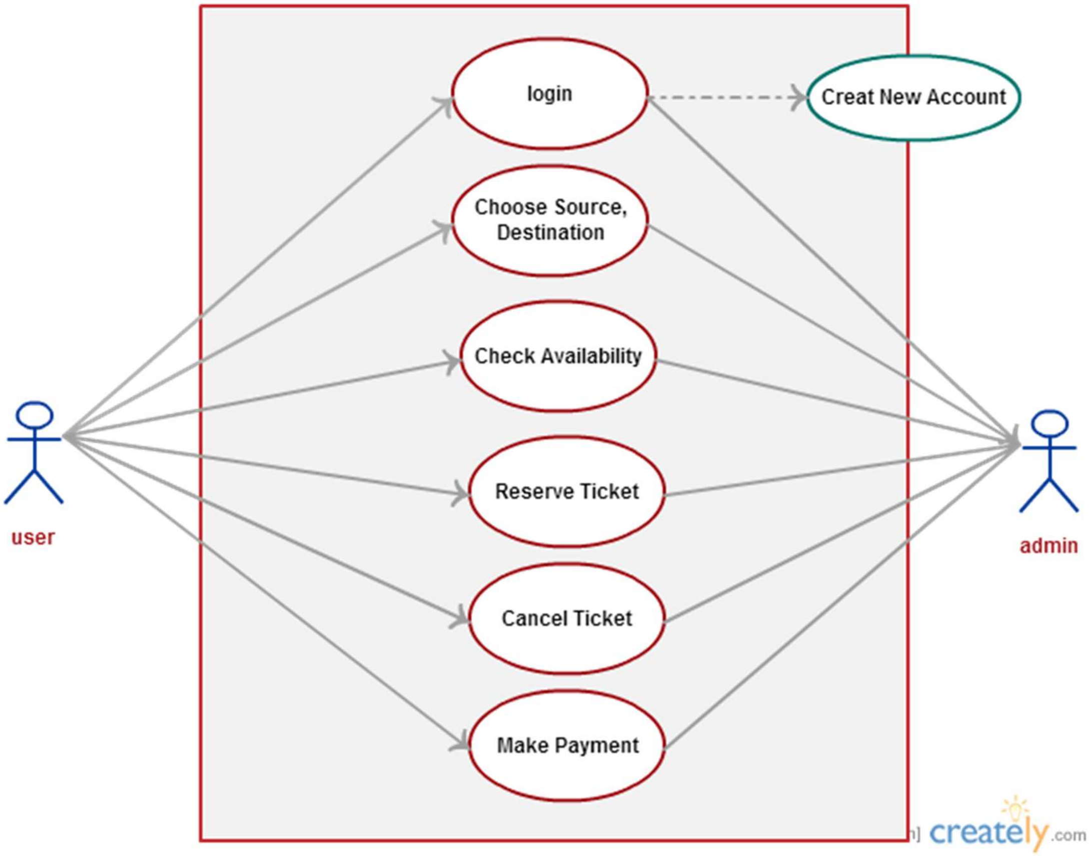


Figure 2: Use-Case Diagram

1. Log In Process

This process ensures that only authorized users gain access to the Reservation databases. An authorized user is a user who has an account on the system. Users include passengers, booking agent, and administrator. The user must type a valid username and password to access the system.

2. Make a Reservation Process

This process allows the user to make a reservation for a particular train on a particular date for number of tickets. If the user does not already have a reservation, then a new reservation is created. If the user already has a previous reservation, a new reservation is added to the list of current reservations, and the passenger account balance gets updated.

3. Drop a Reservation Process

This process allows the user to drop a reservation for a particular train on a particular date for a number of tickets. If the user does not already have a previous reservation, then this process cannot be applied. If the user already has a previous reservation, a chosen reservation is dropped from the list of current reservations, and the passenger account balance gets updated.

4. Display Current Reservation process

This process allows the user to see a list of all his/her current reservations. If the user does not have any reservations at the time an empty list with a message "No Reservations Have Been Made" is displayed.

5. Display Train Schedule Information Process

This process allows the user to see a list of all scheduled train departures including train name, city from and to which the train is going, the number of seats available, and the prices for different ticket types.

6. Display Balance Process

This process provides a list of the current balance and due to. This information separately displays each reservation.

7. Pay Reservation Process

This process allows the user to pay his/her current reservation cost. The user may either pay online via credit card or select to pay in person within 48 hours. The user must also input a valid credit card number.

8. Add a Train Process

This process allows the administrator to add a train with a particular seat type on a particular date and time to travel between the cities specified.

9. Drop a Train Process

This process allows the administrator to drop a train of a particular seat type on a particular date and time that was traveling between the cities specified. If the train does not exist in the current train schedule, the request is ignored. If the train exists in the reservation database, the chosen train is dropped from the list of current train schedules, and the train schedule gets updated.

10. Display Report Process

This process allows the administrator to display the following reports:

Number of Reservations for Each Train

Number of Customers who canceled

Number and Names of People who did not Show Up

List of High Buyers

3.6 Business Operational Constraint

Registration : The user creates an account on the site to be able to log in using e-mail and password to carry out booking or modify.

Search : the user enters the city and determine the date of arrival and departure

Select : after the search select the city ,time and hotel .

Booking : book the trip and confirm the booking that include city name . date. Time and hotel by send massage to mail .

Payment : after the confirm the payment for hotel either credit card or cash at arrive to hotel .

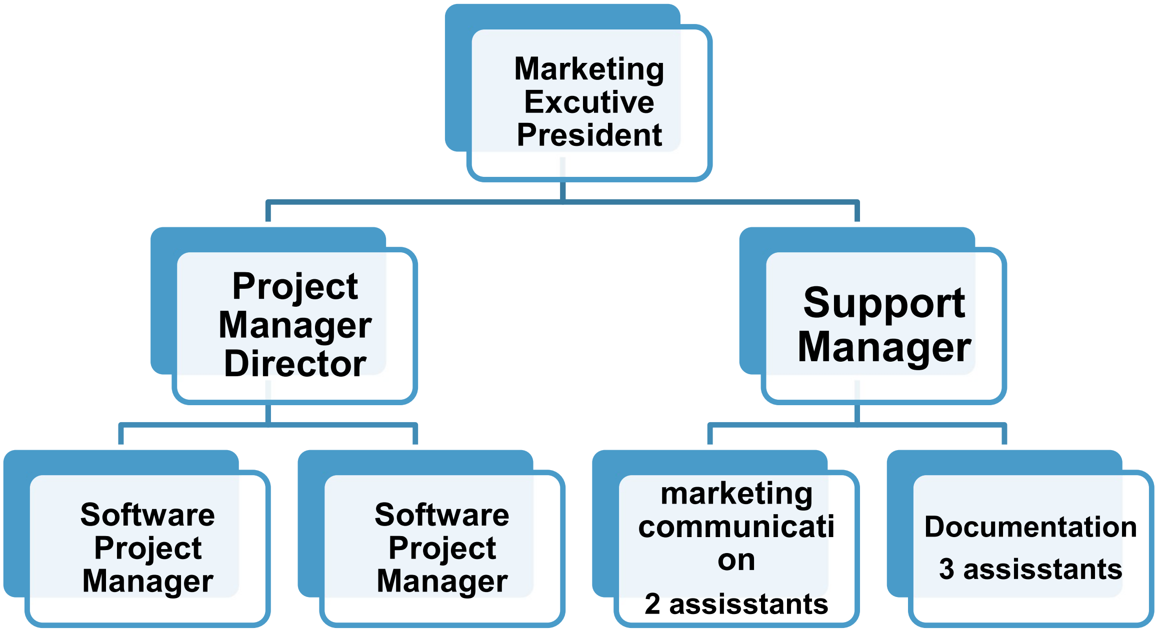
cancellation: can the customer cancel the book or change city ,time…etc., but that subject to the policies

3.7 Business Operational Quality

It qualifies the business operation as of giving the customer a good level of treatment during reservation , the agency will not choose the customer on what they are or who they may be. during the operation it will always be the system of fairness.

3.8 Business Structure

The organization structure of the project is in the following figure



The project responsibilities are:

1. *Project Leader: :Leads project team responsible for the project.*
2. *Project Analysts: Elicit the requirements of the system.*
3. *Software Manager: Responsible for managing the team of 7 people does the design of the software.*
4. *Code Developer: Responsible for writing programming code.*

3.9 User Requirements

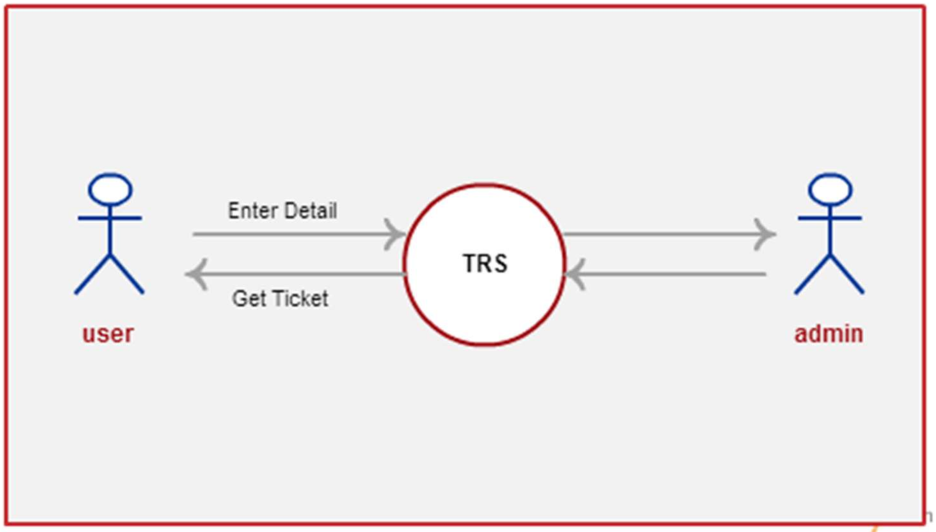


Figure 3: DFD

1. *Administrator*

- *The administrator shall be able to add a new train.*
- *The administrator shall be able to add a new trip.*
- *The administrator shall be able to delete a trip.*
- *The administrator shall be able to update trip information.*
- *The administer shall be able to change the design of the system.*
- *The administer shall be able to control the access to the system.*

2. *Passenger*

- *The passenger shall be able to create an account.*
- *The passenger shall be able to log in.*

- *The passenger shall be able to retrieve their password if they forget it.*
- *The passenger shall be able to search for trips.*
- *The passenger shall be able to select a trips.*
- *The passenger shall be able to cancel a trips.*
- *The passenger shall be able to ask any question if they have any problem or concern.*
- *The passenger shall be able to display their trips.*

3. Booking Agent

- *The booking agent shall be able to get a list of all trips.*
- *The booking agent shall be able to book trips for passengers who don't have account.*
- *The booking agent shall be able to update passenger's trips.*
- *The booking agent shall be able to get all the information about each passenger and their trips.*
- *The booking agent shall be able to display passenger's trips.*

3.10 Description of the Proposed System

The system can be helpful for the people who wants to travel especially those people who has a lot of transactions from place to place. it can give some benefits to others for example if the person can canceled his/her travel, some person whose in a rush to go to that place can go. this system can communicate of any point of the country as long as it is covered by the metro train corporation.

3.11 Operational Scenario

first ,Enter the website http://www.saudirailways.org/portal/page/portal/PRTSAR/RegisterPassengerAR then, select create new account that require email and password , after that , the website require user enter name it . finally, the site will send a confirmation message Subscribe to the user's email. And to log in the site , the user will require his email and password

3.12 Project Constraints

This project will be done and submitted in October 3rd 2015 with total cost 89,000 SR.

4 System requirements specification (SyRS) document

4.1 System Purposed

This system developed through computerized system in able for the operator to know the profile of the passenger if he/she is capable of traveling.

4.2 system scope

a) train reservation system.

b) for example : the passenger is on a wheelchair , and the management know that he/she is not capable of traveling on his own , but he/she insisted that he/she can , the scope of this system is to assure the client of a safe trip , but it is still the responsibility of the travelers to assure also the management , that he/she is capable of traveling.

4.3 User Characteristics

User : refers to the booking agent or passengers which it their function is to take the trip wherever they wanted to.

The operator : is the one that confirms reservation of the trip.

The maintainer : is the one that maintain the availability of the trip and also of the train to travel. He has to check the equipment first before travelling.

4.4 Functional Requirement

System Requirements:

1. The Administrator:

1.1 The administrator shall be able to add a new trip.

1.1.1. The system shall be able to create a trip.

1.1.2. The system shall be able to put trip number.

1.1.3. The system shall be able to put train number.

1.1.4. The system shall be able to put date of departure and date of arrival.

1.1.5. The system shall be able to put time of departure and time of arrival.

1.1.6. The system shall be able to put departure location and arrival location.

1.1.7. The system shall be able to put flight price for adults and children.

2. The passenger:

2.1 The passenger shall be able to create an account.

2.1.1. The system should provide create account button in the main page.

2.1.2. The system should provide a registration page with passenger's information fields.

2.1.3. The system should send an email to verify passenger's email .

2.2 The passenger shall be able to search for trips.

2.2.1. The system should provide a search box in the main page.

2.2.2. The system should provide from, to, departure date, return date, passengers ages, class fields in the search box.

2.2.3. The system should view all trips with the same searched information.

2.3 The passenger shall be able to select a trip.

2.3.1. The system should provide a book button beside every viewed trip.

2.3.2. The system should provide passengers information forms in the book page.

2.3.3. The system should provide an ok button at the end of book page that transforms the user to the payment page.

2.3.4. The system should provide credit card details fields (type, number, CVV number, Expiration date and the name on the card).

2.3.5. The system should send SMS message to the passenger cell phone about his booking information.

3.Booking agent:

3.1 The booking agent shall be able to get a list of all trips.

3.1.1. The system shall be able give list of trips sorted by trip's date.

3.2.2. The system shall be able give list of trips sorted by trip's departure location.

3.3.3. The system shall be able give list of trips sorted by number of reserved seats.

3.4.4. The system shall be able give list of trips sorted by number of empty seats.

4.5 Usability Requirement

The TRS will be developed so that it is an easy to use system that requires the least amount of user input possible. Every input will be validated. The user should only have general computer use knowledge. Error messages will be displayed if the user enters an invalid value. An easy and well-structured user manual will be provided and the system will include help for all operations allowed.

4.6 Performance Requirement

1. Response time: The maximum response time will be one minute.

2. User friendly: The system is easy to use and understand. A native user can also use the system effectively, without any difficulties.

3. User Satisfaction: The system stands up to the user expectations.

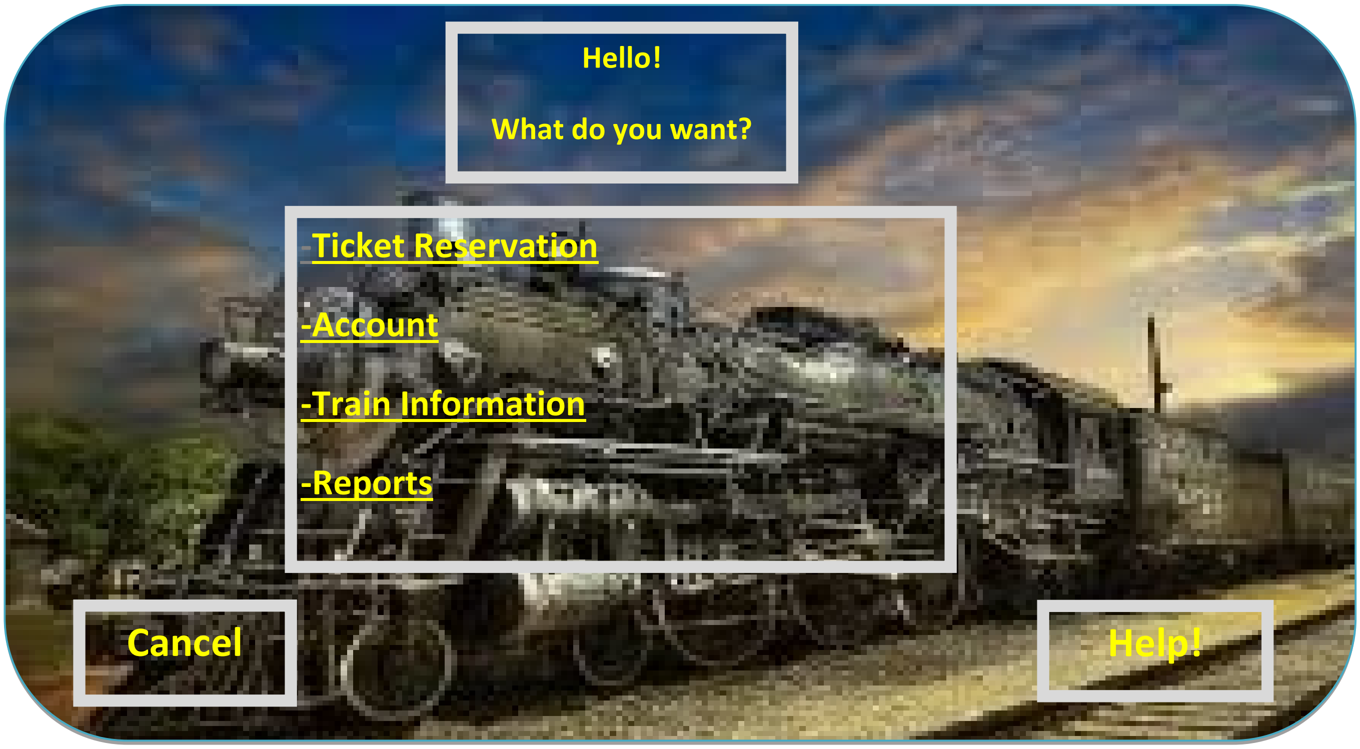
4. Interactivity: The system provides a very easy to use graphical user interface.

4.7 System Interfaces

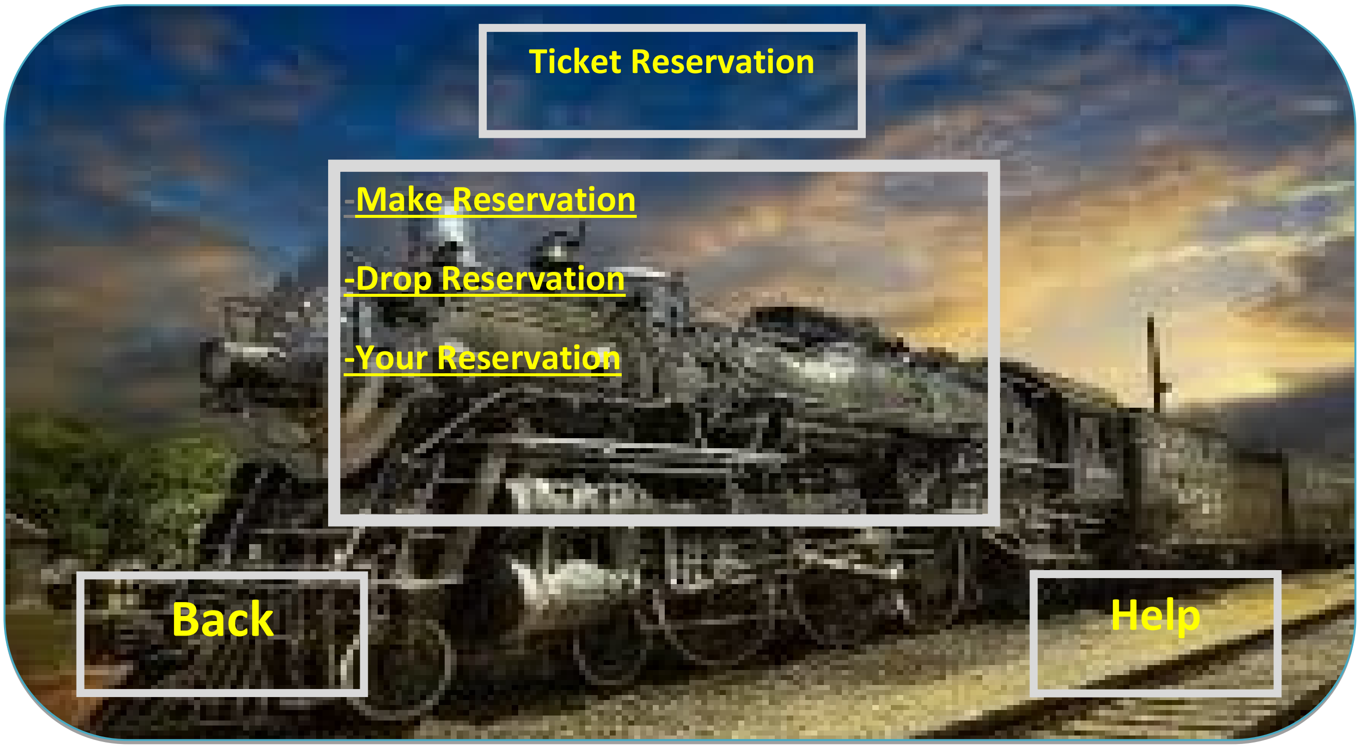
The user interfaces are divided into two major components. One part includes the user accessing the system using the mobile application. The other involves accessing the system through the web site.

The system should provide two different user interfaces one for passenger and booking agent and the other one for the administrator.

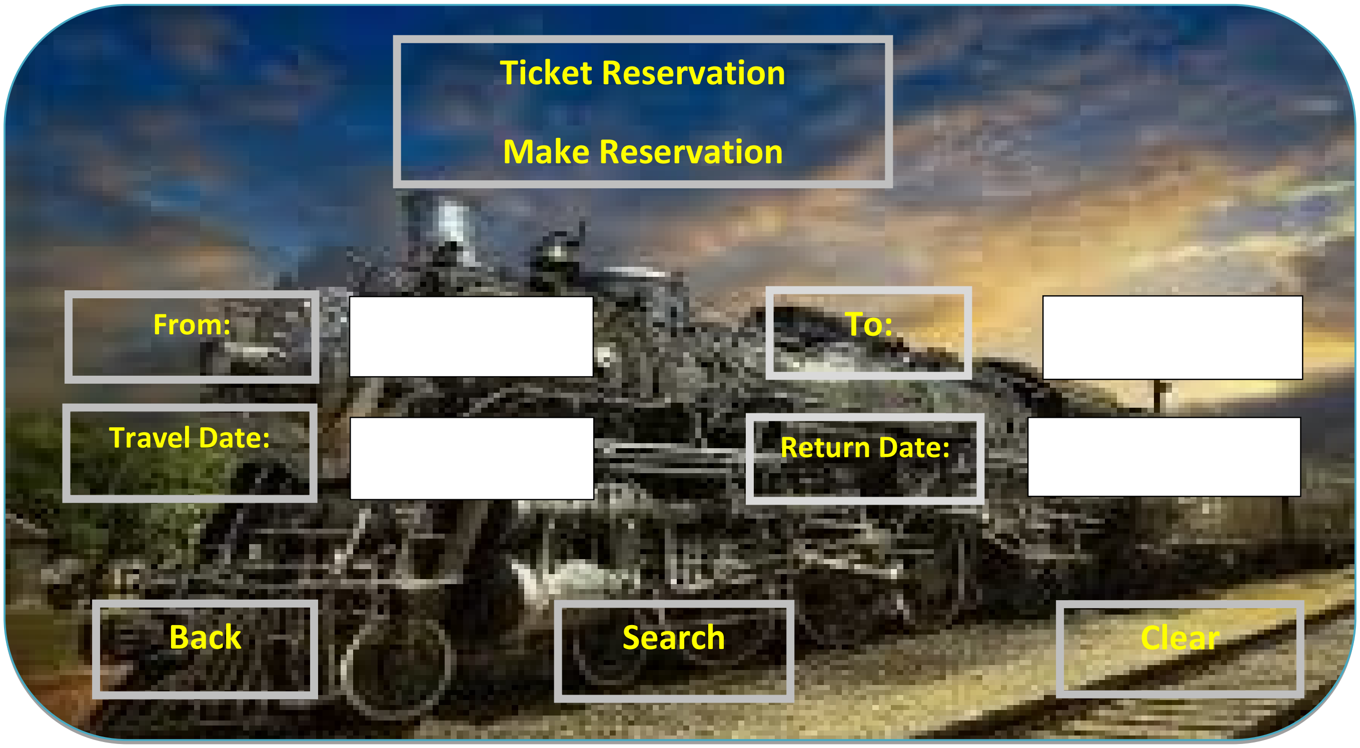
The diagram below illustrates the four major functionalities. These functionalities will be displayed depending on the user. The administrator will see all four functionalities while the passenger and the booking agent will only see the Ticket Reservation and the Account.



Selecting one of these functions will take the user to a different user interface. For instance, choosing Ticket Reservation will display the following web page.



The user can select any of the four functionalities. If the user clicks on the Make Reservation function the diagram below is displayed.



4.8 System Operations

4.8.1 Human System Integration Requirements

human system integration helps identify the customer trip that balances optimal system performance with minimal total ownership cost , while ensuring that the system is built to accommodate the customers population , it is to ensure that systems , equipment and facilities will operate , maintain and support the system. this system include , manpower , personal , environment , training , safety , occupational health , habitability and personal survivability.

for example : during vehicle malfunction the personal should see to it that the environment is not that hazardous to the travelers and also there should be a quick response from the maintenance or operators.

4.8.2 Maintainability

The system source code will be kept well-structured and documented so that it is easier to maintain and extend the system. All changes to the system shall be documented.

4.8.3 Reliability

The system should be capable of processing a given number of reservations within a given time with no errors and the system should be available and all the time 24 hours 7 days.

4.9 Physical Characteristics

4.9.1 Physical Requirement

the physical requirement are computer , website , and application or reservation forms which include customers data , time of trip , and destination , operators or agents name and logo specified by the agency with a consent of the company above it. it covers the fairness of service to the customers and co-workers.

4.9.2 Adaptability Requirement

the system adapt the availability of each trip provided that the manpower is more flexible during expansion of the system. also computers should be updated to the entire process of the system , we could add slots or memory cards to the computer as a back-up , whatever instances occur.

4.10 Environmental conditions

People need to rest and the shortcut from electronic booking that help them save time and easy to use , The main goal is conservative on the environment by providing the amount of paper that was used in the past in the old ticket printing and the second goal is to make it easier for the traveler , So that if you complete the booking you can print more copies of the ticket and take them with you as you travel with ease.

4.11 System Security

The system should automatically log out all passengers after a period of inactivity. The system should not leave any cookies on the user's computer. The user information will never be sold to other parties and will be kept secure all the time. Users will be authenticated to ensure that no unauthorized users gain access to private information.

4.12 Information management

Database management system (DBMS) is the program through which the data retrieval, addition, modify or deleted, and update every 24 hours and save the information , where the software will link between the user and the database engine to perform that task. Backup process must be carried out periodically and regularly.

login for the database must be enter username and password of latter and number.

Computer Reservation System (CRS) is a computerized system used to store and query about booking.

4.13 Polices and Regulation

The system should be supported in a multi-language like Arabic , English and French.

The system should tell me if there available seats.

Provide backup of the database .

The system should show the information for each user.

Don't allow Repetition of trips on the same day.

4.14 System Life Cycle

staff training per week to be skilled if some customer got problem in the reservation.

Appendix

Interview

-What is your vision for the train reservation system?

the train reservation system is helpful for the people or person who wants to travel ,because they don't need to go to the ticketing office. It could save time and effort for travelers.

-Do you think is it hard to have a reservation from the site?

No , it is because you just need to fill In the information that the system need.

-Is it possible for the passenger to avail the reservation ,with in the day of the trip?

Yes , but they have to pay the reservation at least 3 hours before the trip.

-Can they cancel their trip or re-change the scheduled trip?

Yes , they can , but they have to inform the management one hour before the trip , with a deduction of 10% from the reservation . However , if they re-change the scheduled trip , there was a 50% deduction.

-How can they get the ticket through electronic reservation?

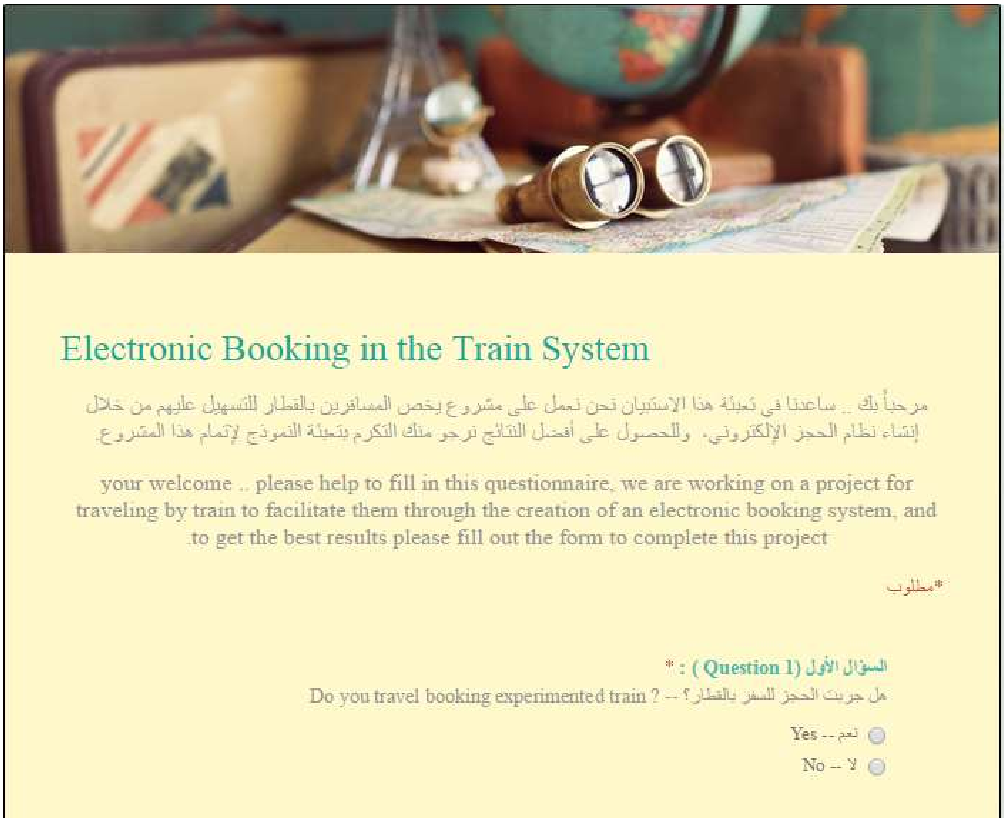
They can get the ticket through the metro station.

-Why do they need to deduct the reservation ticket of cancellation and re-scheduled tickets?

It is to take the account of the passenger rights and not to missed the opportunity to travel and also the availability of seats of persons who want to travel.

Questionnaire

https://docs.google.com/forms/d/1mvy9TWbBjSusECYpx-3z0RNdgUeyqViRWtbDTJjeJJM/viewform?edit_requested=true


Electronic Booking in the Train System

مرحباً بك .. ساعدنا في تعبئة هذا الاستبيان نحن نعمل على مشروع يخص المسافرين بالقطار للتسهيل عليهم من خلال إنشاء نظام الحجز الإلكتروني. وللحصول على أفضل النتائج نرجو منك التكرم بتعبئة النموذج لإتمام هذا المشروع.

your welcome .. please help to fill in this questionnaire, we are working on a project for traveling by train to facilitate them through the creation of an electronic booking system, and to get the best results please fill out the form to complete this project.

*مطلوب

السؤال الأول (Question 1) : *

هل جربت الحجز للسفر بالقطار؟ -- Do you travel booking experimented train ?

- Yes -- نعم
- No -- لا

السؤال الثاني (Question 2) : *

Did you have trouble booking seats on the train ? -- هل واجهتك صعوبه في حجز المقاعد في القطار ؟

- Yes -- نعم
- No -- لا

If the previous answer "Yes," What are the problems encountered ? -- اذا كانت الاجابه السابقة "نعم" ماهي المشاكل التي واجهتها ؟

السؤال الثالث (Question 3) : *

What do you think is the best ? -- في إعتقادك ما هو الأفضل؟

- Electronic Booking -- الحجز الإلكتروني
- Traditional booking -- الحجز التقليدي

السؤال الرابع (Question 4) : *

What are the features that characterize the electronic booking from the traditional ? -- ماهي المميزات التي تميز الحجز الإلكتروني عن التقليدي؟

- Shorten the time -- ختصار الوقت
- Fixed cost -- التكلفة ثابتة
- Services provided -- الخدمات المقدمة
- أخرى:

السؤال الخامس (Question 5) :

Do you think that Electronic booking the surest of the traditional ? -- هل تعتقد أن الحجز الإلكتروني أضمن من التقليدي؟

- Yes -- نعم
- No -- لا

السؤال السادس (Question 6) :

Have you ever booking canceled because of a electronic wrong ? -- هل سبق أن تعثر الحجز وألغي بسبب خطأ إلكتروني؟

- Yes -- نعم
- No-- لا

السؤال السابع (Question 7) : *

How do you evaluate an electronic booking system ? -- كيف تقيم نظام الحجز الإلكتروني؟

- Excellent -- ممتاز 100%
- Very good -- جيد جداً 80%
- Good -- جيد 60%
- Acceptable -- مقبول 40%
- Bad -- سيء 20%
- Very bad -- سيء جداً 0%

إرسال

عدم إرسال كلمات المرور عبر نماذج Google مطلقًا.